

REMARKS

Reconsideration of the above-identified application in view of the following remarks is respectfully requested.

A. Claim Status

Claims 1-5, 8-29, and 32-38 were pending, of which claims 1-5, 8-11, 13-15, 24, 27-29, 32-35, and 37-38 were rejected while claims 12, 16-23, 25-26, and 36 were withdrawn from consideration as a result of a previous restriction requirement. Applicant reserves the right to pursue withdrawn claims in a divisional application. As to the merits, claims 1-5, 8-11, 13-15, 24, 27-29, 32-35, and 37-38 were rejected pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over WO 98/20020 to O'Donnell, et al. ("O'Donnell") in view of U.S. Patent No. 6,124,099 to Heckman, et al. ("Heckman") and further in view of Biochemistry International Vol. 26, No. 5, p. 943-951 to Marriott, et al. ("Marriott"). [1/22/08 Office Action, p. 3].

B. Claims 1-5, 8-11, 13-15, 24, 27-29, 32-35, and 37-38 are Patentable over O'Donnell in view of Heckman and further in view of Marriott

Applicant respectfully traverses the 35 U.S.C. § 103(a) rejection of claims 1-5, 8-11, 13-15, 24, 27-29, 32-35, and 37-38 as allegedly being anticipated by O'Donnell in view of Heckman and further in view of Marriott. As set forth in detail below, O'Donnell, Heckman, and Marriott, whether alone or in combination, do not teach, disclose, or suggest each and every element of these claims. Accordingly, the Section 103 rejection is respectfully traversed.

Applicant's claim 1 recites:

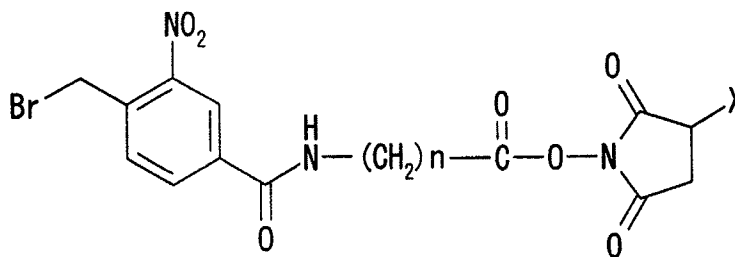
1. A method of acquiring data on the mass of a substance fixed on a substrate, comprising the steps of:
using a structure including a partial structure to be disconnected by light to fix the substance on the substrate;

irradiating the substance fixed on the substrate with light for inducing the disconnection of the partial structure to be disconnected by light; and

analyzing the mass spectrum of the substance which is brought in an unfixed state by disconnecting the partial structure by the irradiation of light,

wherein a structure containing nitrobenzene is selected as the partial structure to be disconnected by the irradiation of light, and

wherein the structure containing nitrobenzene is constructed with a compound represented by the following formula II:



Formula II

(wherein n is 3 to 5, and X is H or SO₃Na).

O'Donnell is directed to a process for immobilizing a high density of nucleic acids on an insoluble surface which is useful for mass spectrometric detection of nucleic acids. [O'Donnell, Abstract]. Heckman is directed, *inter alia*, to methods for identifying novel, sequence-specific target molecules using photoactive ribonucleotides that contain photo-crosslinking agents placed at specific internal positions within a ribonucleotide. [1/22/08 Office Action, p. 4]. The Office Action asserts that O'Donnell in view of Heckman fails to teach a photo crosslinking agent which is also photocleavable. In attempting to remedy this deficiency, the Office Action refers to Marriott which discloses the synthesis and characterization of a reagent for generating free thiol from thioether groups and a related photocleavable, heterobifunctional crosslinking reagent. [1/22/08 Office Action, p. 4]. The Office Action contends that light-mediated chemical bond cleavage was well-known in the art at the time of the invention as evidenced by Marriott's

disclosure of, *inter alia*, photocleavage of a crosslinked 4-bromomethyl-3-nitrobenzoic acid (BNBA)-actin dimer biomolecule. [1/22/08 Office Action, p. 4].

Applicant, however, is not directed solely to photocleavage of a reagent, but rather utilizes this as but one step among a plurality of steps in a method of acquiring data on the mass of a substance. Moreover, Marriott uses BNBA to investigate how a photocleavable crosslinking reagent may be used to modulate the activity of proteins, a reagent and application therefor which differ significantly from Applicant's. [Marriott, Summary and Figs. 1a-b]. Applicant further respectfully asserts that although the succinimidyl 6-(4-bromomethyl-3-nitrobenzoyl) amino hexanoate compound allegedly taught by Heckman falls within the scope of Formula II, Heckman fails to teach, disclose, or suggest the use of this molecule as a bifunctional linker to connect a substance to a substrate as required by claim 1. Heckman instead teaches the placement of this crosslinking agent at specific internal positions within a ribonucleotide and the use of these photoactive ribonucleotides to identify novel, sequence-specific target molecules. [Heckman, Col. 2, lns. 35-41]. As such, it would not have been obvious to use the crosslinking agent of Heckman as a means of connecting a substance to a substrate by a photocleavable linker for use in mass spectroscopy.

Since Marriott is merely directed to photocleavage of a crosslinked BNBA molecule and Heckman discloses a crosslinking agent used within a ribonucleotide, Applicant respectfully asserts that there is no teaching, suggestion, or motivation to use a succinimidyl 6-(4-bromomethyl-3-nitrobenzoyl) aminoalkanoate compound (formula II) as a "partial structure to be disconnected by light to fix the substance on the substrate" as recited in Applicant's claim 1. Consequently, one of ordinary skill in the art would not be motivated to use formula II to construct a photocleavable structure to be used in a method of acquiring data on the mass of a

substance fixed on a substrate based on the teachings of O'Donnell, Heckman, or Marriott nor would one have a reasonable expectation of success.

Accordingly, O'Donnell, Heckman, and Marriot whether alone or in combination fail to teach, disclose, or suggest a method of "using a structure including a partial structure to be disconnected by light to fix the substance on the substrate," wherein a nitrobenzene-containing structure is "selected as the partial structure to be disconnected by the irradiation of light," and wherein the nitrobenzene is "constructed with a compound represented by the following formula II" as recited in Applicant's claim 1. Applicant respectfully submits that independent claim 1 is patentably distinct from O'Donnell, Heckman, and Marriott for at least this reason. Since independent claims 15, 24, and 27 also include the limitation wherein the nitrobenzene is "constructed with a compound represented by the following formula II" they are asserted to be patentably distinct for at least similar reasons. Dependent claims 2-5, 8-11, 13-14, 28-29, 32-35, and 37-38 are also in condition for allowance for at least similar reasons. The Section 103(a) obviousness rejection should therefore be withdrawn. Applicant submits that all of the pending claims are now allowable for the above reasons and early, favorable action in that regard is respectfully requested.

Applicant has chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Furthermore, Applicant has not specifically addressed the rejections of the dependent claims. Applicant respectfully submits that the independent claims from which they depend are in condition for allowance as set forth above. Accordingly, the dependent claims also are in

condition for allowance. Applicant, however, reserves the right to address such rejections of the dependent claims in the future as appropriate.

CONCLUSION

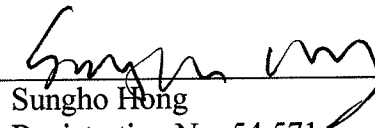
For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is earnestly solicited. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 1232-5564.

Respectfully submitted,
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Dated: April 21, 2008

By: _____


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